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Query and context based visualization of time-spatial cultural dynamics

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## D.7.4 Evaluation Report of Case Study

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# Abstract

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<b>Authors (Partner)</b>	Tõnis Tärna, <a href="mailto:tonis.tyrna@ra.ee">tonis.tyrna@ra.ee</a> Edith Seegel, <a href="mailto:edith.seegel@ra.ee">edith.seegel@ra.ee</a> Kristina Teral, <a href="mailto:kristina.teral@ra.ee">kristina.teral@ra.ee</a> Mona Bonta Bergman, <a href="mailto:mona.bontabergman@humlab.umu.se">mona.bontabergman@humlab.umu.se</a> Johan Lagrelius, <a href="mailto:johan.lagrelius@humlab.umu.se">johan.lagrelius@humlab.umu.se</a>		
<b>Contact Person</b>	Tõnis Tärna, <a href="mailto:tonis.tyrna@ra.ee">tonis.tyrna@ra.ee</a>		
<b>Abstract</b>	The Evaluation report for the Case study and Usability testing of the system developed by the QVIZ project, which is supported by funding under the 6 <sup>th</sup> Research Framework Programme of the European Union.		
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# 1. Executive Summary

This report describes the preparations and performance of the QVIZ usability testing and outlines the most important testing results.

The usability testing was conducted using a combination of *Thinking aloud* and *Case study* methodologies and was performed by representatives of the QVIZ target groups. The testing groups served as sample Communities of Practice for the project while testing the system, and gave good feedback to the development team.

The report gives an overview of the testing methodology and test organization including the preparation of case studies and testing scenarios. It also describes the test teams, and the testing results. The testing results of the Swedish and Estonian test sessions are presented separately and followed by a comparison and generalization remarks.

The appendixes include all the testing notes made by the observers during the test sessions and other test documentation.

The general conclusion from the usability testing was positive and the testers felt eager to use the system. However, the testers wished to see a simpler Graphical User Interface (GUI) and more integration between the components. For future exploitation work on the QVIZ platform, the GUI needs to be made more uniform and universal.

## 2. Introduction

The QVIZ functionality testing was completed in February 2008 and formed the foundation for the final step of the validation activities, the usability testing. As stated in the QVIZ description of work, the system testing is to be followed by a case study of the use of the platform by potential users.

According to the description of work, the QVIZ usability testing will answer questions such as:

- What concepts and references do different user groups have and how is that reflected in their patterns of gathering information and knowledge building?
- How can archival records, presented to the users in ways proposed by QVIZ meet these different user requirements?

Some aspects of these questions were addressed already during the first user trial conducted in spring 2007 and helped to define the main QVIZ target groups in greater detail. However, the first user trial could not serve as an actual end-user testing, since the components of the intended system were not yet fully functional by that time and the whole concept of the system could therefore not been tested. The feedback from the first user testing was therefore rather limited. In order to evaluate the usability of the QVIZ platform in relation to the user needs and expectations, there was a need for more usability testing after finishing the development work on prototype 2b.

The description of work also states that the projects' Communities of Practice should be created with knowledge that enables an effective validation and assessment of the system. The documentation also states that the case study should be prepared and written from a user perspective that is based on an evaluation of the research, knowledge and profile of the users.

The evaluation report of Case study therefore describes the process and the results of the QVIZ usability testing, conducted in February and March 2008 in Sweden and Estonia. The usability testing was performed by focus groups consisting of selected representatives from the four main QVIZ target groups: Educators, Genealogists, Professionals, and Students.

As for the concept of usability, it is a combination of serving the purpose, easy to use, and easy to learn that makes a system effective. Therefore, the usability testing has to determine, if the user interface is easily learnable and if it contains the functionalities that users would have expected – and to identify difficulties that a user may have while using a product, i.e. record the process, how the user handles the system and how he/she understands how it works.

In order to be able to get valuable and constructive feedback about the usability of a system, the testers have to follow an accurate testing scenario during the trial, which leads them through the entire system. The right approach of describing the test assignment for the testers will therefore be of critical importance. In order to meet these objectives, a widespread research practice from the social sciences, a *Case study* was selected as the strategy for the QVIZ usability testing.

Although the Case study assignment provides the tester with a concrete sequence of research tasks to walk through, the testing session needs to follow a certain methodology as well. As previously stated in the D 7.3 Assessment methodology

and user scenario test plan, the *Thinking aloud* is considered to be the most appropriate and effective methodology for the usability testing of QVIZ system.

The *Thinking Aloud* method lets the potential users of the system try to perform the expected research tasks, while observers watch, listen and document the entire testing process. This report therefore gives an overview of the QVIZ usability testing process, describes the testing preparations and organization, as well as the performance of the Case Study and the testing results.

## 3. Usability testing in QVIZ

### 3.1 Methodology

The approach chosen for the performance of the QVIZ usability testing was a combination of a *Case study* and the *Thinking aloud* methodology.

The Case study is a widespread social science research practice, exercised in different disciplines. Rather than using large samples, the Case study method involves an in-depth examination of some single instance or event: a case. Case study research may include either a single case or multiple cases, it can include quantitative evidence and rely on multiple sources of evidence. Because of the focus on the detailed contextual analysis of the carefully defined case, the Case Study (defined as a research tasks for a QVIZ target user) gives an excellent chance to test the usability of the QVIZ platform.

As already described in deliverable 7.3 “Assessment methodology and user scenario test plan”, the main objective of the *Thinking aloud* testing method is to “make explicit what is implicitly present” in the test subjects who are assigned to perform a specific task. The *Thinking aloud* methodology involves testers thinking aloud as they are performing a set of specified tasks. According to the methodology, a test subject performs a set of easy tasks and the observer watches and takes careful notes of everything said or thought aloud. The test subjects are asked to comment aloud on every step they take, talking about what they are doing, what they are thinking, problems they have encountered, solutions they choose and so on. This enables the observers to see first-hand the *process* of completing the tasks, rather than only assessing the *results* of the task completion.

As for the observers, they need to have knowledge of the system, but are asked to objectively take notes of everything the tester expresses, without attempting to interpret their actions or words. The observers are not allowed to help the test subjects understand the object of the test. They are to stay silent and only observe. Any interference with the test subject’s efforts to understand the system on their own will jeopardize the integrity of the test. The subject’s input is most important, whether it is positive or negative criticism, an activity or being unable to act within the system. The Case study tasks set for the test subjects cannot be too instructive. The subject’s abilities to overcome obstacles and understand the systems structure is important and consequently one cannot give them too exact instructions. While constructing the tests Case Study, the authors must know how the system works and how to accomplish the tasks.

When the thinking aloud test has been carried out, it is important to extract more information from the test subjects. To ensure that as much helpful information as possible is gathered, there is a need for a follow-up discussion. The input and ideas of the testers can be most helpful and every chance to secure their knowledge must be taken during the usability testing. Therefore it is important that the test subjects have a chance to ventilate any feelings they might have towards the portal before they leave. By scheduling a discussion after the test, questions arising during the test session can be raised and answered.

The methodologies described above were fully implemented during the test sessions.

## 3.2 Test organization

### 3.2.1 Preparations for the usability testing

During the functionality testing of QVIZ, all the prioritized Use Cases were tested and all the important functions were gone through in order to ensure that the system is ready for the possible end-users. Apart from the Use Cases, the Key Usage Scenarios defined in the D 3.3 Domain Ontology Report were also tested during the functionality test sessions. In conclusion, both the list of the prioritized Use Cases (added as an appendix to the D 7.1.2) and the Key Usage Scenarios from D 3.3 served as the entry criteria for the usability testing. After compilation of the concrete Test Cases all the features and functions of the system needed for the performance of the Case study were tested once more and some minor bugs were fixed.

All the technical programming and development work for Prototype 2b was finished by the 18th of February 2008. This date was set for the “code freeze” by the testing team during the project management team meeting in Tartu in January of the same year. Since the vast majority of the entry criteria described above had been fulfilled, the decision was made to use the Prototype 2b for the usability testing and not to allow any more changes in the test environment after February the 18th. All minor bugs in the system and inconsistencies with content data detected after the code freeze were decided to be fixed in a separate environment in order not to disturb the testing activities.

The Prototype 2b consisted of the two integrated parts: the Query-Map environment [http://polaris.regio.ee/qviz\\_test/](http://polaris.regio.ee/qviz_test/) and the Collaborative environment <http://qviz.salzburgresearch.at/qviz>. For further information about the features provided in Prototype 2b, see D 7.1.2 “Software validation diary and final validation report”.

The next step after the code freeze was to create a critical amount of user-added content in order to provide the system with substance. This needed to be implemented into the prototype to ensure that the test subjects would get an accurate picture of how the system was meant to function. An empty system that leads the test subjects to dead ends would result in a dysfunctional usability trial. For that reason, a number of Communities of Practice, Archival Social Bookmarks, collaborative documents etc., were created by the members of the testing team following the topic areas of the Case Studies.

All that work was done about a week in advance in order for the test leader and test observers to be able to plan the test activities thoroughly.

### 3.2.2 Documentation

Each tester was provided with the Case study description and a QVIZ user manual. The observers took careful notes and gave them to the test leader after the test session. The observers rewrote their own notes in order to avoid unnecessary misinterpretations. The deadline for completing the test notes was set five days after the actual test. The discussion session was also documented carefully by the test leader.

### 3.2.3 Case Studies

There were two important principles developed and agreed upon during the test team meetings regarding the preparations for the usability testing and Case study:

- The usability testing will be based on two separate national Case Studies as testing scenarios.
- The object of the Case Studies will be the integrated QVIZ system and all the functions must be tested in the logical sequence, not separately.

The advantage of having two national Case Studies was mostly of practical nature: foremost, the available test data were from Estonia and Sweden and would not engage testers in the same way outside of these countries borders. The most important objective of the usability testing was to get easily comparable testing results and feedback about using the entire system.

The QVIZ test team developed the testing scenarios in collaboration with a historian and archivists. The focus of the testing was on a research strategy that will capture all the basic functions of the QVIZ system. This approach led to the construction of two national Case Studies, one for Estonian testers and another for the Swedish test group, following similar research tasks but concentrating on different data and regions. The Case Studies were made as similar as possible in order to make the testers perform the same actions and to yield comparable feedback in both countries.

The research strategies of the Case Study in Estonia were selected on the basis of the possible interests and expectations of the biggest QVIZ target group, the family researchers and local historians. The research strategies in Sweden were chosen for the target group that QVIZ hopes to reach, the students. The concrete places and time-periods were selected following the most understandable and easy to use examples for all the members of the test groups.

The descriptions of the Case study gave the testers only general guidance and outlined the logical path they were expected to walk through while doing their research, but did not provide them with any instructions or concrete commands how to use the system in order to reach their goal. Having only their research task to fulfill, the testers had to find ways to use the system. All the subtasks within the research task of the Case study were logically connected to each other so that the next task arose from the previous ones.

The testers were not expected to find the historically accurate answers, but rather to find relevant places and sources, with a focus on testing the QVIZ platform..

The logical parts of both scenarios were to 1) find the research area, 2) to find and save the resources and 3) to compile and share research and 4) to collaborate over it with other users.

The first part served as a lighter introduction to the test where the testers could navigate and try out while the second part was about finding documents of interest and bookmarking them for future reference. Part three was an introduction part to the collaborative environment and to reconnect with previous work. The fourth part of the assignment was to give the testers a chance to use the collaborative environment as a potential tool for helping and assisting each other. As pointed out earlier the full test was constructed in this way in order to make the task as close to reality as possible for information gathering and sharing that the focus group could be performing. The test had a flow that would be highly plausible since one would start with trying to find resources, to later bookmark them, and then proceed to sort and discuss the findings.

The case study tasks were written in English in collaboration between the Estonian and Swedish partners, so that they would be similar to each other. Prior to the test

the case studies were then translated into Swedish and Estonian to make the focus group comfortable during the test session. Performing a usability test in a language that is not one's native language could make the testers feel uneasy.

### **3.2.4 Research Strategy of the Estonian Case study**

The research case was to investigate the spread and consequences of smallpox in Estonia during early the 19th century.

A vaccine against smallpox was developed in late 18th century in England and in the decades thereafter it was distributed and used all over Europe, first in cities and then into the countryside. The first known vaccination on Estonian ground took place in 1825 in Tallinn. In this research task the testers will try to find out the death rate due to smallpox among children in Alatskivi, between 1835 and 1840. Then compare that to the death rate due to smallpox, in Rakvere for the same time period.

### **3.2.5 Research Strategy of the Swedish Case study**

The research case was to investigate the spread and consequences of Baptism in Sweden.

Sweden has a long tradition of a strong State Church, and until 1858 the Conventicle Act prohibited people to gather for religious reasons without a clergyman. It was also compulsory for Swedish citizens to baptize their children soon after birth. But during the 1840s Free Church ideas were spread and the first Baptist baptism (for adults) was performed in the parish of Sidensjö, (outside Örensköldsvik, Västernorrland), in 1847, which means that 1) there must have been Baptists in the parish and 2) they probably did not baptize their children (which was against the law) and 3) some children must have been baptized with the "help" from authorities, i.e. the Church and the police.

## **3.3 Test teams**

The usability testing of the Case study was performed in Sweden on the 28th of February and in Estonia on the 5th of March. Both test teams consisted of a test leader, five testers and five observers.

The focus group in Estonia consisted of one representative from each QVIZ target group and two from the genealogist target group, which is the biggest target group in Estonia. For the test session in Sweden, there were two representatives from the student target group, which is a target group QVIZ hopes to reach. The testers were chosen on the basis of their interest in archival material or their profession, which is somehow connected to archives or collaboration. The test groups were put together in a way that covered different experiences, age and gender. As planned previously in the description of work, there were representatives from three different European universities (Umeå, Uppsala, Tartu) involved in the testing.

As for the observers, they were people with some deeper background knowledge about the QVIZ project.

### **3.3.1 Swedish testers**

Tester 1 – a 31 year old, male PhD student of history from Umeå University. As a historian he is familiar with archival material and archives. His computer skills are average and he uses mostly MS office daily in his daily studies.

Tester 2 – a 35 year old, female PhD student in literature from Uppsala University. Her computers skills are good and she uses computers in her work and studies daily. Her computer knowledge in MS office is extensive and she visits internet pages often and is part of communities like Facebook.

Tester 3 – a 39 year old, female, lecturer at Umeå University, but also a PhD student in history of ideas. Her computers skills are good and she uses computers daily in her work. Her knowledge of MS office is above average. She has an interest and skills in the design process from her work with Interaction design students at Umeå Institute of Design.

Tester 4 – a 45 year old, male archeologist at Västerbottens länsmuseum. Through his work he knows archives and archival material very well and uses it on a daily basis. He is also very familiar with GIS, maps and computers through his daily work.

Tester 5 – a 70 year old retired teacher and dedicated genealogist. He has much experience of the SVAR portal since he uses that tool frequently. The tester uses the software Disgen that he finds work well with Geline.

### **3.3.2 Estonian testers**

Tester 6 – a 23 year old male history student from Tartu University, very good knowledge about materials of Estonian Historical Archive and with a good computer knowledge.

Tester 7 – a 33 year old female history educator, PhD in History, very good knowledge about archival materials and good computer knowledge, although she has never worked with Wikipedia, forums etc.

Tester 8 – a 30 year old female professional, MA in Art History, works at the University of Tartu Art museum, has good computer knowledge. Has visited archives, but does not use archival materials frequently.

Tester 9 – a 24 year old male genealogist, studying psychology at Tartu University, works in a company as a genealogist, therefore uses genealogical material on an everyday bases. He has very good computer skills and knowledge.

Tester 10 – a 60- year old male genealogist with a degree in mathematics, works as a scientist at Tartu University, with medium computer skills and knowledge. Genealogy is his hobby and he is a regular guest at the Estonian Historical Archive.

## 4. Results

### 4.1 Test session in Sweden

The Swedish test session was performed on the 28th of February 2008 in a language computer lab at Umeå University. The test was set up in a calm environment away from any interruptions in order to make the focus group comfortable and facilitate the thinking aloud method that could otherwise be perceived as embarrassing to the focus group.

The same week of the test, the observers who were not so familiar with the QVIZ prototypes were presented with a short description of the QVIZ system and the tasks that would be provided to the focus group later on. The observers were also given a possibility to try out the system more freely for half a day with the assistance from people with system knowledge. They were also informed of what was expected of them, how to act during the test and the correct ways to refer to the system functionalities in order to facilitate the work of reporting.

QVIZ accounts were created beforehand for all the testers and the login notes were placed by the computers that were to be used. When the focus group arrived, a member of the test team met them and made sure that they had coffee and were comfortable. After this there was an explanatory session (see Appendix A3) where the day's agenda was presented together with a quick introduction to the QVIZ project and the expectations on the session at hand. The testers were frequently reminded that it was the system that was on trial and not the testers themselves, and that they were chosen for this test *because* they have different computer skills. Along with an explanation of the thinking aloud method the testers were also informed of the observers role. The testers were reminded to think aloud, describe what they were doing, why they were doing it and to report any issues encountered. A short video<sup>1</sup> followed on a QVIZ platform scenario that started with a faceted search, moved on to using the links into the archives, and the bookmarking of a resource. Then the video showed the collaborative environment where features like searching, construct an article, copy and paste references were shown. The testers were paired up with an observer. The pairing was constructed in advance so that there were no prior relations between the testers and observers, to make it as objective as possible. The testers were recommended to have conversations with their respective observer, however only conversations that did not include the environment or the test itself. When the presentation came to an end, the tasks were presented with handouts and it was stressed that the objective of the test was to arrive at the image of an answer or a suggestion to where the answer could be found rather than the complete answer. The path was more important than the actual results. The testers took place with their observers and the testing commenced.

While testing the test leader together with the observer were allowed to make joint decisions when to help the testers get further. These decisions were taken when the testers got stuck and could not continue in a way that would otherwise jeopardize the testing results. Problems that forced the observers to intervene were problems like; not finding the way to the collaborative environment, (which would have led to that no usability test would be performed on the collaborative

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<sup>1</sup> <http://www.qviz.eu> (QVIZ video, QVIZ platform scenario)

environment at all), getting stuck within the archives which are separate from the QVIZ platform and not on trial or similar issues.

The test performance was very much facilitated by the presence of a test leader that could move around, listen in and make sure that the tests were coherent. The observers and testers had a coffee break together in order to keep the testers from discussing the test. This proved to be a challenge that the observers handled well. During the day there were some changes made to the program, the test session became longer than originally planned. Time was drawn partly from the discussion, however the testers and observers stayed longer than planned since the discussion engaged them all exceedingly.

## *4.2 Test session in Estonia*

The Estonian test session took place one week later, on the 5th of March 2008, in the meeting room at the Estonian Historical Archives.

On the day prior to the test, the 4th of March, the observers and the test leader walked through the whole testing process. The observers were informed of their duties and all login names were created for the testers. The observers worked through the test case. The test leader was available to answer questions or solve any issues that could arise. The observers were instructed to take test leaders advice during the actual test.

Next day, during the actual testing session, all testers and their observers had computers with internet connection, a Case study description and the possibility to consult a QVIZ user manual in English.

The test team, consisting of five testers, five observers and a test leader worked in the same room. The QVIZ web portals were opened beforehand.

The testing day started with a short introduction of the QVIZ project and the prototype. Testers were shown a short introductory movie describing how to use QVIZ made by Umeå University. The movie was in English, but fortunately all the testers had at least basic knowledge of the language. The movie gave the testers a good idea about the main features and functions of the prototype, so that they had some prior knowledge of what they were going to test.

The testing was divided into two one-hour sessions. Between the sessions there was a 15-minute break, during which neither testers nor observers were allowed to talk about the testing. The testers were served drinks and appetizers during the break.

All testers were eager to test and motivated to learn the system. All the testers at some point needed instructions from their observer.

On a general scale, the Estonian testing was organized according to the methodology and similar to the Swedish testing.

## *4.3 Results of the testing sessions*

### **4.3.1 Sweden**

#### *4.3.1.1 Introduction - find your research area*

The testers started off by trying to find a search instrument that they could use. This mostly meant some random clicking in the environment. Even though some initially looked at the map, all but one (tester 4 archeologist) used the search facet

in order to find the location. The map was an appreciated tool that was used to investigate whether there were any changes to the borders between different levels and to compare the adjacent municipalities. One tester used the map as the bases for his search since he had problems finding administrative units in the facets. The same tester understood that the grey layering in the time window was a visualization of the resource count. In general, the testers had problems understanding the map and its function and one stated that the fields in the platform did not relate to one another logically. Another tester had problems finding the zoom bar, others did not discover that the map could be dragged using the mouse. A tester stated that the overview map should be more visible and that the regular map should have arrows around so it could be move using them. One tester got lost in the map while using the zooming function. However, tester 1 (PhD student) discovered that one could zoom using the mouse scroll. Another tester looked for a way to set a time perimeter but could not find the time line until instructions were given by the observer on how to find it.

The testers felt that the numbers in the facet terms were difficult to understand. And one tester found it illogic that clicking on their name closed the facets.

Many of the testers were expecting to be able to double click on the result list and receive more information regarding that particular resource. A common thing amongst the tester was their dislike for the way the result list was sorted, they expected it to be presented in a chronological order. One tester suggested that it could be sorted after ones own interest.

The testers that found the time slider liked it very much but did not use it due to the difficulty of fully understanding the feature.

A lot of the expressions and language used in the environment were difficult for the participants to comprehend. Two testers wondered what an administrative unit is, and one what an archive resource really was, another wondered what the direct and indirect resources represented.

The testers either never tried or did not understand the show map legend function or the history of point tool, they counted the resources manually from the result list.

Tester 3 (educator) pointed out the necessity for an interaction designer to be engaged in the project in order to make the environment less technical and more logical for the user.

All testers found the answers to the tasks presented under this headline.

#### *4.3.1.2 Find and save resources*

Two testers used the browser's bookmarking tool. It was considered easier and more logical to bookmark there instead of while researching within the archives. One tester started to bookmark via the browser function but realized that the bookmark would not work in the QVIZ system.

The testers did not close or log out each time they bookmarked which led to a problem of loosing the pop up window. Some testers got frustrated when they had to look for the window amongst all the other windows that had opened up. That they did not log out also made it more difficult to of find the way to the collaborative environment since one of the links was situated on the pop up that declared that the user had successfully logged out.

The bookmarking icon was difficult to find for all but one tester and many testers felt that the icon should be larger and have a more distinctive color. However, while inside the bookmarking tool, the testers found much appreciated help texts.

Many of the testers only wanted to collect information from the start and meant to add information to the bookmarks later on. Therefore they missed to fill out some of the required information in the bookmarks and since there was no error message, this led to the fact that their bookmarks were not stored. One felt that the result list was more important to keep and tried to bookmark the result list and got very frustrated when the bookmarks made within the browser did not bring back the result list.

In order to compare the results from one municipality to another, one tester chose to resize two windows and put them next to each other and compared the results in that way.

Tester 5, a genealogist, never got to the collaborative environment, he used the testing time to understand the query and visualization environment. He preferred to do his searches within the SVAR portal and needed reminders to focus on the QVIZ platform. He was pleased with the time-spatial environment and felt that given more time, he would learn and appreciate the environment.

#### *4.3.1.3 Organize, compile and share your research*

Only one tester (tester 2, PhD student) managed to get to the collaborative environment without any intervention from an observer. The remaining testers were faced with the problem to get to the collaborative environment. They could see their user in the CoP member facet and they could see interesting CoP groups they wanted to join. They tried to double click on the facet terms, on the results displayed but they could not get any further. The observers had to intervene to guide the users to the collaborative environment. Despite the frustration the CoP facets gave, they were much appreciated by the testers.

When using the collaborative environment, most of the testers expected to find a way to create a CoP in the top left menu under create. Only one tester went directly to community in order to create a CoP. One tester pointed out that the first impression of the environment was confusion.

To list communities was no obstacle.

Forms for joining and creating CoPs were confusing for the testers. Many fields lacked a prompt telling them that they were placed within the field where they wanted to add information. This made the testers uncertain and caused them to click in the field again, which produced an error message that the information was not valid. Since the testers did not feel like they could fill out the forms, they could not create or apply properly since these were required fields and made the Create button inactive. Many of the testers questioned the asterisks' meaning, if it did in fact imply that the fields were mandatory. The observers had to step in and give the instruction that it was possible to write in the required fields even if there was no prompt. Two testers wondered what the different fields in the forms meant, how they would be displayed and who could read it.

The likeness of posts, discussions, articles, user pages etc confused the testers. They could not separate what was what and they never felt they knew what they had constructed.

Most testers did not succeed in making any kind of collections in their workspace area. Two testers created a subfolder after being reminded by an observer to use

right clicking in the environment. Another tester found the tree component confusing and wished for a different coloration to make it stand out from the background. One tester commented that this function should be on the main page as an intuitive functionality. Many of the testers expected to be able to double click on the information in the workspace area in order to display it.

Tester 2 (PhD student) succeeded in finding the link symbol in the WYSIWYG editor and was very much pleased with the feature. The other testers had problems understanding how content is added and understanding the symbols.

#### *4.3.1.4 Collaborate*

One tester (tester 1, PhD student) succeeded in joining another CoP and to start a discussion on that CoP's user page.

The common impression from all the testers was a lack of information regarding how to handle the QVIZ system and what could or could not be done and that the language and vocabulary was difficult to comprehend, one tester suggested that a language consultant should be contacted to transform the text to fit users. The testers did not use the manual since they found it to extensive and difficult to understand. One tester expressed a wished to have the instruction film close by. The educator made a remark that her students would have lost interest and focus quickly.

Many windows were opened during the testing session and this confused the testers and they found that moving between the environments was difficult.

### **4.3.2 Estonia**

#### *4.3.2.1 Introduction - find your research area*

For the first-time users there was too much information to grasp at once and too many functions and features to use. The testers felt that there was too much new knowledge needed and they did not have the best prerequisites. One can conclude that some explanatory texts and hints would have facilitated the test for the focus group.

There were a couple of technical errors during the Estonian testing – the prototype hung and did not save the information. It is possible that these errors were caused by too many and too quick mouse-clicks within the environment.

The testing session showed that the testers that had prior knowledge about similar kind of databases, collections and wiki-environments, also had certain habits when it came to how to use these and expectations on how functions and features should work. Not all of their expectations corresponded to the predicted user habits.

There were cases when testers did not understand that the facets she/he had opened were going to appear when you scroll the active-facets menu. A lot of confusion was due to the different areas in the time-spatial map interface. The connection between different areas was not obvious and users did not understand at once how to use these areas.

#### *4.3.2.2 Find and save resources*

After a short look-around and getting to know the time-spatial environment a bit better, the finding and saving resources seemed fairly easy to all users. But there were some suggestions about technical improvement. Some of which would probably be really easy to fix and would improve the usability of QVIZ.

One tester, the student, commented that the map and the active facet feature should somehow work together for the researcher to see the place he is interested in both on the map and in the active facets area, so that the resource list would also be accurate with his choices. For the record, these features are corresponding, but as there is not enough information about the map layers and archival resources, it is possible to get confused while using the time-spatial environment.

AU history should have administrative unit types, otherwise it is difficult and pointless for researchers. Without the AU types the AU history has no true meaning.

#### *4.3.2.3 Organize, compile and share your research*

The testers commented that it was time-consuming to learn how to use the collaborative environment, because they found too many different features, which were difficult to understand as English was not their native language. There were situations where it was clear that the confusion the testers suffered was due to the foreign language. The testers did not understand the function of the menu or the feature and was disappointed when it did not work as he/she assumed.

Bookmarking in Saaga – the window, where the user adds information about the bookmark is not movable and important data about the archival resource often ends up outside of the visual screen area. To push the create button, one must scroll down to the bottom of the page, and after pushing the button, the notice confirming that the bookmark was successfully created is too high up – one must scroll up again to see it.

A couple of the basic functions within the Collaborative Environment seemed to be too difficult for the testers. For example the relate feature.

Four out of five Estonian testers tried to zoom in by clicking on the map and dragging the map. Only one used zoom bar.

The testing showed that the prototype still needs developments to make the system a bit easier to learn and to develop the functions in order to make them more logical and simpler to follow.

#### *4.3.2.4 Collaborate*

The collaboration part seemed to be the easiest task for the testers. They managed to find CoPs and join them, wrote new posts and searched for users with similar interests. One tester, the genealogist, wondered whether finding users with similar interests and CoPs is going to be possible, if QVIZ has thousands of users. The testers commented that there were not enough ways to narrow down the search.

### **4.3.3 Comparison of the test results for Sweden and Estonia**

Both Swedish and Estonian testers were frustrated with the systems Graphical User Interface. They found it difficult to comprehend both when it came to the structure and the language used within the environments. This was expressed repeatedly by all testers in both testing sessions.

The functions, features and the language used for the components or the search results were difficult to understand for all testers. However, nearly all testers found the system appealing and could see themselves using it in the future. The provided functions and features would facilitate the search process for many of the testers if some requirements like better structure and simpler language was met.

To find the way to the Collaborative environment and the environment itself proved to be a challenge for all testers. The right clicking function was not an action known to the users. A majority of the testers expressed a concern that the content they created perhaps was not the intended content. The confusion to whether they created an article, a discussion, a post and so on was experienced by all testers. The environment seemed to shut down on most of the testers both in Estonia and Sweden.

The issues raised by the Estonian and Swedish testers were very similar and the results cannot be separated into any specific session issues or difficulties related to the different countries.

Most of the testers experienced the same issues with language, GUI and new features. One cannot derive any common denominators from the target groups that would not be true for the remainder of the focus groups. Experience played an important role. The testers that had knowledge of the archives did well on the parts that included archival results. The tester that worked with maps worked best with the map. Experience on communities helped while using the collaborative environment. However, despite their previous knowledge, they all had problems understanding the feature, function or environment fully. The language used was difficult for them all to comprehend and as for the structure, confusion and illogical were words commonly used by the testers to describe how they felt.

#### *4.4 Discussions from the testing session*

##### **4.4.1 Sweden**

The focus group felt that the GUI must be changed into a more intuitive environment that is more self-instructive and provides visual information. They felt that as it looks right now, the ways through the environment cannot be found and that better instructions must be implemented. Too much pre-existing knowledge is presumed. They felt they had more of a Windows office mindset with double clicking, and being able to drag and drop. They pointed out the importance of having a good GUI and that the introduction is easy follow. A request that the facets could be tailored to the different countries was expressed. They felt it unnecessary to have facets that are inactive for Sweden available.

However, it is known and accepted by the focus group that new systems and environments demand time to learn, and that it requires more time than a test like this could provide.

The educator pointed out that, if it takes too much time to learn a new system, the user will return to a system they know. Two hours is a good break point for how much time one feels like spending on a new system before giving up. Long manuals only cause resignation.

The history student, the archeologist and the educator found the time-spatial environment easier to understand while the literature PhD student from Uppsala found the collaborative environment easier to follow.

To find the CET environment proved to be impossible. Moving between the environments was difficult, a lot of different windows were opened, which was confusing. Knowing how to return to the page used before was difficult. They found that there was no logical order or information on how to return. They felt that an interaction design is needed in order to facilitate usage. Wiki knowledge is not that widespread within the focus group and they therefore had problems

finding the function they sought. To be able to use this tool as an educator one would have to spend so much time explaining how to use it that there would not be enough time to perform the tasks. The environments are very different when it comes to design, function and presentation.

There was some confusion when the result list was not ordered chronologically.

The idea with the map as a search instrument was appreciated and considered an excellent solution with a lot of potential. The focus group also very much liked the idea of being able to bookmark and sort the archival resources online and not have to spend that time in an archive. They also appreciated to always have access to the bookmarks, however the CET environment must be more intuitive. Many of the testers wanted to bookmark the very page they were looking at and did not think it well communicated that this was in fact possible. Articles, notes, tags and so on were difficult to separate from one another, which confused the testers.

Back-tracking what one had done was difficult. They couldn't find the ways to do that because the headlines for the different functions were problematic to understand. The relationship overview made the testers think that it contained some sort of network. A simple listing, like articles, bookmarks and so on was preferred.

All things that could be created should be found under the menu option Create, even create a community of practice. The testers were eager to see how it would be solved with content sharing in the collaborative environment, they wanted to be able to decide if a document is shown or not.

The bookmarking icon was difficult to find and it did not "communicate" bookmark.

#### **4.4.2 Estonia**

In general, the testers thought that the whole system was great to use and a couple of them stated that they definitely would like to use it in the future. One target group representative, the educator, remarked that it would be an especially powerful tool for those who have not yet worked in the archives. When somebody has a lot of experience in searching for resources in the physical archives about some research topic, then the system could be more of an obstacle for him/her rather than a help.

At this stage the testers realized that the system had a lot of technical problems and it took too much time to learn how to use it. The system had great potential, but required a lot of prior experience and time to learn how to use it. A simpler and a shorter user manual and good explanatory text and hints would make QVIZ a lot easier to use.

The testers found the time-spatial environment interesting and informative. It would be a useful tool for finding information with all resources attached to administrative units.

The time-spatial environment made it possible to search in two different ways – through map and/or by using facets. One tester was especially fond of the map, but was not happy that the facets did not respond to choices made on the map. In the facets area the constant need to renew your choice was nerve wrecking for the tester. Suggestion was given that the facets and map should respond to each other.

Only small parts of the archival resources were connected to QVIZ. The educator, who used archives frequently, commented that it was impossible to find certain

resources. There should be a message to users that it is not possible to find all archival resources using QVIZ.

As the time-spatial environment was easier and the usability of the map was attractive it was thought to be a great way to bring more users into the archives. The time bar and the possibility to view the changes of administrative unit borders made it an interactive and modern tool.

The social network in the QVIZ environment was a really good help for beginners. For them it would be really interesting to read other users articles. So, the testers were certain that the collaborative environment would help to broaden the number of users. The interaction of finding a resource, viewing it and storing it where others could take part of it, made QVIZ truly attractive.

In the future the collaborative environment would need to be a bit better and have an easier structure. Right now for a beginner the environment was thought to be awkward and illogical. Information did not open the first time the user clicked in a window. One must click several times and use the right clicking option to open and view. The relate function was the most difficult feature to understand. To insert a new tag for the first time to a resource was a difficult process to follow. While trying to open something one had to click too many times.

One tester loved the idea of QVIZ, but mentioned that the collaborative environment had a too difficult a structure and was uncomfortable on the eye. Yet he was certain that after learning how to use it, it would be a most practical system.

The possibility to detect what topics were researched by other users made the system very appealing. The collaborative environment had a lot of functionalities when it came to using it, both by using menus and the mouse. One tester thought that maybe the collaborative environment felt difficult because of the English language. She was certain that the system would need an instruction for the user to be able to manage it by themselves.

The work already done within QVIZ was regarded as ideal. Some of the features, for example the communicating with other users and making ones own article were difficult to comprehend.

The testers were positive that QVIZ would be a great system to use if some features were to be developed and made more logical. One tester found the bookmarking to be something all genealogists would love, because they have done bookmarking in their own way, but QVIZ would offer a much better method.

One tester commented that the usability and integration of the QVIZ system seemed to be logical, but she pointed out that she had no prior experience with similar kind of systems (Wikipedia, forums etc).

Another tester thought that QVIZ was meaningful to the genealogists because it could provide alternative resources that are difficult to find otherwise. He loved the administrative unit approach.

#### *4.5 Comparison of the discussions*

Both the test sessions in Sweden and in Estonia were followed by a discussion. Both discussions showed that the testers found the whole idea with the QVIZ system very intriguing and full of potential. They liked the possibility to use a map and see the change of administrative units over time and to find archival resources connected to these places in the same environment. All target group

representatives felt that the collaborative environment could be a really good tool to share ones work and communicate with researchers of similar interests.

As the time for testing was quite short and testers did not have time to learn the whole system, they expressed a need for better manuals and easier instructions within the system. At this stage of the QVIZ development the time-spatial and map environment proved to be easier to grasp and work with. The majority of the Swedish and Estonian testers compared the two different environments in QVIZ and found that the time-spatial interface to be easier to work with. But later in their comments they revealed that it was the bookmarking tool and communicating and sharing ones material in a collaborative environment that made QVIZ fascinating. So the integration of the two different environments has maybe not yet found the best technical solution, but despite the fact that the integration was a still ongoing process the testers saw the potential of the system and a reason to use it in the future. Testing in both countries showed that using Wikipedia, forums and other similar kind of environments is not a widespread habit and this may also be a reason why the majority of testers found the collaborative environment more demanding. Genealogists and educators both in Estonia and Sweden mentioned that QVIZ can be used to help them in their work.

As Swedish testing took place one week earlier there were some experiences from the Swedish test session, which helped organizing some things a bit differently in Estonia and to make the whole process a bit smoother. Therefore all testers were satisfied and seemed to enjoy learning how to use a new system.

#### *4.6 Recommendations from the usability testing*

Most of the criticism from the testers was connected to the GUI, which the testers found problematic to understand and difficult to work with. The main recommendations from the testers are therefore to focus on improving the usability of the graphical user interface. These are the most important improvements requested by the test team:

- The GUI has to be simplified and made more intuitive – it needs a better structure and the functions should be made more visible. More explicit instructions and help texts would be of great help
- The use of language and terminology must be simplified a lot in order to make the system more easily understandable and usable
- The integration of the QVE and CET environments must be improved, right now the GUI lacks the integration

When it comes to the different components of the QVIZ platform, the testers found the CET the most difficult to work with. As for the possible improvements, the following aspects were pointed out as most vital ones:

- The number of functions should to be lessened and the structure more unified
- The differentiation between the types of user-created content within CET has to be clarified and distinguished more visually
- The right-clicking function in CET could be replaced with some simpler technical solution

After an oral briefing for the development team of the results from the usability testing, the developers have been continuing to improve the integration and the

GUI of the system. Two design school students specializing in interaction design have also been engaged in the project to try to improve the integration aspects and the usability of the system.

## 5. Conclusion

The description of work aspects of constructing CoPs to enable effective validation were taken into account by using the information from the Key usage scenarios and target group descriptions from D 3.3 and D 7.3 as a foundation while constructing the Case study. The test team provided the collaborative environment with CoPs that would correspond to the case study as well as trying the key usage scenarios in the environments prior to testing. The case studies were written by the test team, which consisted of partners with extensive knowledge of the target groups that the focus groups were created from. The results show no sign of the case studies being too difficult to understand nor that the assignments were difficult to complete the knowledge the testers possessed. The focus groups were diverse with an age span from 23 to 70 years. There were four women (two in Sweden and two in Estonia) and six men involved in the testing, all with different computer and research knowledge. This diversity provided a chance to, for instance see whether the age had any influence on the test. It turned out that the focus groups eldest participants had more problems to grasp the environments and its use. However there were no apparent differences between the target groups or gender related differences. This conclusion needs to be investigated further though, in order to verify these observations properly.

The methodology chosen, the thinking aloud method, can easily be corrupted if the observers intervene at the wrong time, or by the testers not feeling comfortable enough to express their actions and thoughts. These problems never became an issue since the observer together with the test leader decided when to help the tester forward. The testers were outspoken and provided important material on their actions, thoughts and issues found. This created a good foundation for the tests credibility. The time plan for preparation and accomplishment of the usability test turned out to be a bit optimistic. Preparations were finished before the test date, but by a couple days instead of the preferred couple of weeks. And due to some unforeseen events the reporting process took longer then expected. The results from the usability test were presented to the partners orally the week after the second test session. However the written report was set somewhat aside when many from the test team unexpectedly were prevented from focusing on the deliverable. But, since the test team had made an oral report the developers had time to begin the work on implementing and solving some of the issues that the testers had pointed out.

The results from the test clearly show that the Graphic User Interface for both the time-spatial and collaborative environment was difficult to comprehend and work with. A lot of the negative criticism was colored by the GUI related issues, this meant that a lot of the positive remarks also became tainted by the GUI problems.

Wiki was not a known thing to most of the testers which was disclosed in some of the issues that the testers encountered, like not finding how to edit the article, not finding the symbol for linking, right clicking, and so on. The CET environment hung many times and the testers found the environment difficult to use since they often did not know what they produced or how to produce material. A majority of the testers felt was easier to follow the time-spatial environment. The features in both environments were praised and many of the testers saw the potential of the system and wished that they had more knowledge of the system in order to explore it further. The obstacle was mainly the amount of functions and features put on top of each other that the testers had to comprehend. From this the test team concludes

that the features and functions are very much desired but that the GUI must be more intuitive in order for the target groups to use it.

The testing session proved that the preferences the testers had walking into the test was the parameter that most influenced the testers performance. The testers previous computer knowledge had more impact on their ability to act within the QVIZ platform than which target group they belonged to. The more experience that the testers had of working with computers, the easier it was for them to comprehend the environments structure and functions. However the testers were expecting the environments to correspond more to their own way of handling their computers such as double clicking. To double click on an item to view it was a known thing while the right clicking was unnatural to the testers.

Prior to the test, the test team expected that there would be differences between the countries focus groups and differences between the target groups. However, the test itself showed that computer knowledge was the determining factor.

Genealogists could find information quicker within the archival portals but they were not quicker within the QVIZ environments that were tested. And despite the diverse group of people that were engaged in the focus group, they all had problems understanding the choice of vocabulary for the different terms when it came to features, functions and results.

For future work on the QVIZ platform, the GUI and the language need to be made more uniform and universal since the computer skills are the driven force when it comes to using the system rather than the target group belonging and knowledge.

# Appendix

## *A1. Observation notes for the Swedish testers*

### **A1.1 Tester 1, PhD student**

#### *Introduction – find your research area*

Tester1 started by trying to find Sidensjö, he looked for a search function since he did not really know where Sidensjö was situated. He checked the map first, then found the search facet and tried to use it. He had no problems clicking down facets.

The search facet provided two administrative units, Sidensjö församling and Sidensjö kommun. The tester clicked on församling first then kommun to check if they differed in size on the map, but he found that they were the same size. He clicked on församling again and received results.

To find the lowest administrative unit the tester searched the result list under AU history. He wanted to be able to double click on the results to receive more information. He got distracted when the results did not display in chronological order, and he could not grasp what the different administrative units' represented. But still he managed to find the answers he was looking for.

To find an administrative unit close to Sidensjö with at least 6 archival resources, the tester checked around Sidensjö on the map and clicked on the units and counted the resources shown in the result list. The result list was favored because it was sorted in chronological order.

When trying to move the map around Sidensjö, he discovered how to zoom by using the scrolling function on the mouse. However he never found out that he could move around the map by clicking and dragging.

The time-slider was found while looking at the map. And he realized that the borders changed but felt that he would have liked to have more information regarding how this works.

#### *Find and save resources*

The tester used the web browser's function to bookmark. He right clicked on the resources and bookmarked them. He found birth, death and communion books in the result list and bookmarked them, still using the web browsers function. He searched for the bookmarks he made in the browsers menu and found them after a while. He tries the bookmarks he had made and did not comprehend why the webpage was reloaded and that the resources he bookmarked did not show. He expected that the page would appear as he left it with all the resources and the map response. He felt that it would be more logical and would not want to go the whole way into the archives in order to add bookmarks. He right clicked on a resource and was pleased with the bookmarking he had made. After repeating this he found one resource he wanted to look more carefully at and tried to double click on the resource, after that he found the SVAR link and ended up in the archive.

He looked at the resource and enlarged the picture in order to read it. He would have wanted to take one person and look for that person but decided that this would not be possible in QVIZ.

He wanted to go back and look for one child and returned to the map function by using his bookmarks and became troubled by the fact that he arrived at the very start and had to find everything all over again. He clicked on a resource and used the SVAR link. Within SVAR he tried to find how one could bookmark within the archive, he used all the buttons in the SVAR environment. He found a button that provided the SVAR source and he copied that. Then he found the bookmarking symbol and tried it when he saw the name QVIZ on mouse-over. He gave the bookmark a title and a description and he saw that the name of the resource was present in the metadata. And therefore gave the bookmark a title that was slightly more descriptive. He returned to the social bookmarking and pasted the url he found (on the source icon next to the bookmarking tool) as a keyword and pondered over the pop up menu over CoPs, he did not comprehend what it was for. He commented on the size of the bookmarking symbol, it was considered too small and too hidden, which he found very inconvenient. He never logged out of the bookmarking tool and therefore never found the link to collaborative environment.

He proceeded with new resources chosen from the time-spatial environment and bookmarked them the same way. He wondered if this was the way he should have bookmarked from the start. But he thought that it was an unnecessarily long process and he still preferred to bookmark via the browser. He found the bookmarking process by using the web a lot better, and therefore when he bookmarks more resources he returns to the browser bookmarking form that he prefers.

On proceeding to the task of comparing different municipalities and parishes he wanted to keep the result list he received on Sidensjö while making a new search and decided that the best way to solve this would be to open two browsers and put them next to each other. To find the resource Landa that was asked for in the assignment, he returned to the Search facet and wrote Landa there. He encountered a problem when the search facet did not load the information, so he tried to add Halland to the facet and clicked go. When that did not work, he tried again from the top, and then it worked.

To solve the assignment of finding a resource that could be compared, he looked at the result list and checked the time span for the resources. He again bookmarked these within the web browser.

#### *Organize, compile and share your research*

The assignment to organize bookmarks he felt he had already done within the browser and therefore he never tested that function within the wiki.

The tester never encountered the collaborative environment so when it came to the assignment to make your own CoP, he looked within the time-spatial environment. He found the non-AU facets and comprehended that “användare1” was himself and that he could see the bookmarks he had made within Social bookmarking even if he did not understand that it was only those bookmarks that showed. He expected to be able to double click on the facets terms in order to get to the CoPs. He kept searching in the time spatial environment in order to find a way to create a CoP, searching both within the time-spatial and the browser functions. He got frustrated when he could see his own user and CoPs that he would have liked to join. He could not get any further.

*Intervention: The link to the collaborative environment was shown to the test subject.*

In collaborative environment he tried clicking on the tabs view and discuss, not understanding what their function were. He found community in the menu but could not see the “create community of practice” choice within that menu. He moved on to the create option in the menu and expected to find it there. He chose all communities and could see that they were displayed. But still did not understand how to create one.

He moved on to clicking on his user page in the upper right corner. He understood that it was his page. But still kept trying to find how to create a CoP. He returned to create to the left in the menu field. He went on to once again look at the view and discuss tab. He tried to find a list of other users. He went to community in the menu and chose “All communities”. In the provided list he discovered a community that covered an interesting subject and he found out who kept it. Now he wanted to contact that community. He right clicked on the community and found “Join CoP”. He chose that and received the form for joining. He provided a motivation because that was the only field where he felt he was allowed to write since there was no marker telling him he could add information, if he clicked in the other fields, the only thing he got was a popup that said “The value entered is not valid”. He did not understand what this meant. And he felt he could not add information and therefore the save button was never activated and he was forced to cancel the application.

He clicked on the CoP and saw that there was another way to join directly on the CoP’s page. However he was faced with the same problem as before and felt forced to yet again cancel. He returned to trying to create a CoP. This time he found create CoP under the community menu. He was yet again faced with the problem that no blinking symbol told him that these fields could be filled out. And was forced to cancel even that attempt to create, he felt he could only fill out the description and conditions, the rest of the fields only gave warning signs and did not provide the blinking symbol. He was frustrated and tried to find some sort of manual that would tell him what to do. He found it in the menu, but he felt overwhelmed with the extent of the manual and closed the window straight away.

*Intervention: The information to write even if there was no blinking symbol was given.*

He successfully created a CoP and proceeded to the CoP navigator in order to instruct people to join his newly created CoP. He entered another CoP and there took the decision not to find and persuade people to join but instead hope that they would find their own way.

He turned to create an article through the create menu. The popup that said “identifier for (qvizcet:Article)” did not make him feel like something he should provide and therefore the two articles he created are named “My Content” and “My Content1”. He moved on to relate content, and clicked on Manage community sharing and he provided rights. He understood that add relations meant relate. He realized that he had found resources without looking for them.

He wanted to write the article and tried to find some sort of word editor program in the browser menu. He tried the relationship overview. He double clicked on the folders under My CoPs and did not succeed. After that he clicked on the plus sign but could not find any word editor. He tried to discuss and saw the new post button and made a comment that it must be an email function. He tried the edit tab and realized that it might stand for write as in writer and therefore editor. In the WYSIWYG editor he gave the article a name and he put down some text. He clicked on save page and found that his article was created. When returning to the

assignment he realized that he were to add references. He suspected that he had to make a new one, but to his delight he found that he only needed to return to the edit tab. He wanted to add a link and tried to click on the html symbol, paragraph, edit textual metadata but did not know the symbol for linking and said that he had expected to find a function like that. Back in the SVAR environment he copied a url and pasted it directly into the article in its edit mode. He returned to his bookmarks made in the web browser and tried to add them. That only opened new windows though.

He went to his user page and clicked on preferences, but closed it quickly. Edit provided a possibility for him to present himself. But he started to wonder if that was the article, if he should have written the article there. He was confused when he could not separate the user page from any other page. Upon trying the changes tab and the compare selected versions the environment got stuck.

After all this, he wanted to return and he clicked on the workspace area and then the user page in the upper right corner.

### *Collaborate*

The tester tried to find a person to get in touch with. All communities were chosen under the community menu and he right clicked on a CoP of interest but could not see the list members function.

He returned to the menu and clicked on create and then post. He could not comprehend the pop up that is shown directly and aborted the attempt. The collaborative environment was stuck and the tester needed to log out in order to continue working.

On re-entering the environment he searched all communities in the community menu again and joined a CoP and became a member. He moved on to discuss and made a post. (*This after being told not to be afraid of trying buttons.*)

To find bookmarks he returned to the time-spatial environment and looked at the displayed bookmarks made by CoP members. He was very pleased with this function.

He went back to the collaborative environment and tried to find out what another CoP might be doing. And he clicked on a CoP. There he found their tags and through them he found bookmarks made by that CoP.

Problems with going back and forth in the environments were pointed out.

## **A1.2 Tester 2, PhD student**

### *Introduction – find your research area*

The tester started off by trying to find a log in function. She oriented herself on the page then started with the task. She searched using the search facet and pondered over the numbers in the facet terms (direct/indirect resources). She found the lowest unit, but never attached the other facets with the search facet. She kept on exploring the facet function. Then she moved on to clicking on the map and found resources, but got stuck since she was not accustomed to the GUI. She felt uncomfortable with the map but still managed to find the results needed to complete the task.

*Find and save resources*

She could not understand the function of the facets. She discussed the function around the resources versus facets, could it be possible to search for results directly or did one have to flip through pages to find them. She had no experience of NAD or SVAR but tried a NAD link and tried to find the correct documentation for the time in question. The tester then returned to the resources in the faceted browser and tried the SVAR link where she found some documents of interest. She used the browsers' bookmarking function in order to bookmark. Since she had no experience of the archival documents she felt very disoriented in the SVAR portal and felt that this knowledge was important before one attempted to reach any results.

*Intervention: The observer informs of the SVAR GUI.*

The tester then bookmarked resources, she successfully logged into the Social Bookmarking and proceeded to the bookmark description.

*Organize, compile and share your research.*

She closed down some windows then logged into the collaborative environment, she checked that the bookmark was present and then she wanted to create her own CoP. She first tried the edit tab, then moved on to create in the menu where she could not comprehend the vocabulary. The tester then found create a community under community in the menu, she filled in title, description and condition, she wondered if the asterisk meant that the fields were mandatory. She tried to create different fields both filled in as well as empty, she asked herself if these fields should be informative for other users or if one could write just about anything. It did not feel logical to her. She thought that title/description and primary topic all were the same thing and that it had nothing to do with membership description. She filled out all the fields but could still not create a CoP.

*Intervention: Information is given by another observer about system bugs.*

After having received assistance the tester succeeded in creating a CoP. She moved on to my bookmarks and edit. However, she was not able to organize her bookmarks there. She moved on to discuss, view and looked for a higher level that she lacked connection to. She searched in the search and navigate area and wondered how one could create a category. Could not get any further.

*Intervention: The observer provided information regarding right clicking and relations.*

Moved on to create subfolder and commented that this function should be on the "main page" as an intuitive functionality. The tester moved on to the menu and clicked on create, collaborative environment, article, popular article and name. She could however not write an article. She clicked on types, and popular article again, she could not comprehend what this was for. She tried the link `qvizcet:article`, and could not write there either. She moved back to article again, gave it a name but only created a format. She went to edit, then discuss and new post and wondered whether that was an article or if it is on a lower level. She entered and uploaded text, she created a new post, and went to the wiki link builder and claimed to be missing references for the vocabulary.

She moved back in order to edit the article but nothing happened. The tester tried to make a new article in order to edit but moved on to discuss. She got annoyed that she could not find the marker in the text field, she wrote down some information then she clicked on the wiki link. She tried to search for links and

found one that felt relevant. She expected that the search only would provide her own links but found to her delight that it provided a wider search result. The tester did not want to click on the links afraid that she would end up at the sites. She moved to the left, right clicked and posted the link. This opened her eyes to the possibilities with collaboration.

#### *Collaborate*

She moved to create but could not see any personal page, she moved on to community, could not find it there either, moved on to användare 2 to the right and then clicked on edit.

### **A1.3 Tester 3, Educator**

#### *Introduction – find your research area*

Spontaneously the tester felt that the instruction film got her confused after a mere 30 seconds, it was too technically oriented. However, she decided to try as she went along. First she tried to find Sidensjö, she looked for the zooming function. She pressed State, Nation, Region and County then gave up trying to find the zoom. She clicked on a facet term and archival resources appeared, she discovered the zoom in the map corner and commented that an interaction designer was needed for this project to be user friendly. It felt to technical and not logical to the users. It was hard to understand despite fair computer knowledge. This GUI reminded her of Indigo, a program that is difficult to use.

She found that the little map moved and she remarked that it should be more visible and that the big map needs arrows around it in order to move the map. The tester never realized that the map can be moved by clicking on it and drag it. She clicked on the AU Örensköldsvik on the map but received no reaction. Instead she discovered the search facet and wrote Sidensjö and clicked on Sidensjö församling that showed on the map. Then she pondered over what an administrative unit could be.

She moved the time slider to the year 1905 and complimented the function. She read the results in AU History and found the administrative units that Sidensjö belonged to. She moved the time slider back to 1800 again and clicked on the map while watching the Archival Resource count and got lost in the map due to the zoom function. She discovered the indirect resources but it did not contain any information for that particular resource. She clicked on a different AU on the map. This time she managed to change the page on the result list and discovered more resources. She found it difficult to know what an archive resource really is.

#### *Find and save resources*

The tester felt that to move the time slider to 1845 is logical, she again complimented that function. She found a resource she wanted to view and tried a link, uncertain of what to choose she tried NAD. After clicking around in that environment for a while she returned to the time spatial environment to try the SVAR link. She was prohibited by a missing plug-in and felt like she was missing something and tried to find the introduction film. She went back to the archival search and tried all over again. She lacked some guidance from the introduction film once again. She was disappointed that she could not get any further. While receiving help to get past these unplanned problems she pointed out that it contained many different and complicated steps to search. She felt that her students would have lost their focus a long time ago.

She started over this time with functioning plug-ins. She commented that the resources within the archival search should be organized and systemized by resource types rather than by a jagged chronological order. Or even better one could sort them after ones own interest.

The tester attempted to make bookmarks. She moved around the mouse over the menus and first after removing a column she found the small bookmark symbol next to settings and source. She felt strongly that this symbol must be changed, it did not give any inkling of being a bookmark, more an icon to change the size of the window. It did not give any information that was usable, it should be more apparent, bigger, more like a book or a book containing a bookmark. It should also have a more distinctive color.

She clicked on the bookmarking symbol and logged in. She liked what she saw. The help text was very much appreciated. She only filled out the title and meant to fill out the rest later on and she clicked create. Another resource was chosen and bookmarked. However she was disappointed when she had to look for the open bookmark window since it did not pop up again. Still she very much enjoyed this function and bookmarked more resources.

Bookmarking was not possible for one of the resources, she then stopped to bookmark without logging out. When she moved on to the next task, to find Landa församling, she returned to the archival search and the search facet. When trying to bookmark a resource connected to this AU she again received the message; Failed loading resource. She found it difficult to find her way back when the bookmarking function stopped working. However she moved on to the next task.

#### *Organize, compile and share your research*

The task to find how to make your own CoP seemed impossible. She tried closing the facets, she found it confusing that the names of the facets closed them. She wondered how to find the bookmarks she made. She found herself in the CoP member facet and that she belonged to a CoP. Even though she hardly understood what is going on, she was intrigued. She tried to construct her own research area and organize her bookmarks by right clicking and received the choice to bookmark this page. She chose a new folder but realized that it was only the web browsers function. The tester tried to double click on a CoP because she could see the connection but not how to proceed. She was confused. She tried to click around and tried the Show map legend but did not find the information interesting. She could not figure out how the history of point tool worked either. She got stuck and resigned.

*Intervention. The link to the collaborative environment was shown to the test subject.*

The testers' reaction was that the link was incomprehensible. She thought that was the address for the page she was then presently on. There must be a more obvious button. She entered the collaborative environment and was struck by confusion. The environment looked like a wiki, but she felt that the tabs and buttons were based on technology language and could not really associate to them.

She moves on to trying to create a CoP. She expected to find it under create in the top menu. When she did not find it there she moved on to the workspace and clicked on användare3, she found the tree component but thought that it was confusing. She would very much like another color on the menu so that it did not blend in with the background as much. She tried to fill out the form but discovered that some fields did not appear writable after she clicked on it. The only thing that

appeared was an error message that made her feel like she was doing something wrong. She succeeded in creating a CoP, though.

The tester moved on to finding her bookmarks. She did not receive any results. She tried all the tabs like discuss and edit. Moved on to the upper menu and clicked on QVIZ platform, there she discovered the manual but she found it overwhelming and pointed out that a language consultant should have been involved to translate it to user language. She still could not find her bookmarks. The tester moved back to the bookmarking function to fill out all the fields this time (*this after having been told that due to a system bug the bookmarks are not saved if they are not complete*). The bookmarking tool failed to load all the metadata and she could therefore not proceed before the time was up.

#### **A1.4 Tester 4, Archeologist**

##### *Introduction – find your research area*

The tester started by reading through the task and then he started by clicking on the county Västerbotten. He noticed that there was a time scale. He zoomed in on Sidensjö. He then looked for the same location using the faceted browser, he looked for the nearby town Örnköldsvik. He clicked around trying to figure out how the system worked. He examined Sidensjö by relating to nearby municipalities. He had problems finding the administrative units in the faceted browser. He quickly found that the arrows in the faceted browser had different functions by clicking on them. He wondered to what municipality Sidensjö belonged to at present time. While he read the results he found that the fields in the platform did not relate to one another logically. However he did find the results he was looking for.

He then discovered the timeline and started using it. He made the interpretation that the grey layers communicated the amount of archival resources that could be found. He confirmed this by clicking on more administrative units. However he did not comprehend how the direct resources were displayed and what they meant. Nor did he find the map legend in order to find the amount of material that different administrative units contain.

##### *Find and save resources*

He found the archive source rapidly. And even found the resources he needed quickly. When he discovered the correct page he quickly found the bookmarking symbol and logged in to the social bookmarking. However, he did not add keywords and a description to his bookmark, which led to that the bookmark could not be found later within the collaborative environment. He then logged out and started over with another bookmark. The second time he did not log out, he only used the close sign in the browser window. Yet another bookmark was made.

The tester went back to the map and made his searches there to solve the tasks of finding documents concerning relatives. He had no issues finding these by using the map and the archival links. He had worked with similar systems and therefore quickly got the hang of it.

##### *Organize, compile and share your research*

While finding ways to create a CoP the tester moved back to the faceted browser and found the CoP group facet, here he could see his own user but he could not find a way to get to the collaborative environment.

*Intervention: Observers pointed out the way to get to the collaborative environment.*

He entered the collaborative environment and went directly to community in the menu and chose create community. He gave it a name and filled out the description of the CoP. He became uncertain what membership conditions meant. He felt he had already decided this by choosing an unrestricted CoP. And he wondered how these two were connected. Nor did he understand what was meant with the asterisks. But he decided that it meant mandatory fields since he could not proceed without filling them in. He clicked around the environment in order to understand the function.

The tester found that he had misspelled the title of his CoP and tried to change it. But he could not figure out how to and therefore stopped trying.

The tester then moved on to trying to organize his bookmarks and turned to bookmarking. He tried to look for his bookmarks but they were nowhere to be found. As pointed out earlier, this was not possible because all the fields were not filled out properly while bookmarking. He tried to read the user manual on how to proceed, but gave up since he could not understand it.

After realizing that the bookmarks were nowhere to be found he returned to make more bookmarks, which worked. He wondered how one is supposed to organize ones bookmarks. He clicked around in the environment. The tester tried the tabs, searched in bookmarking then create in the menu but got stuck.

*Intervention: Observer points out the right clicking function on his own CoP.*

After that the tester quickly made own subfolders. However he had problems getting the bookmarks into the folders.

*Intervention: After some time the observer points out the right clicking copy and paste.*

He expected his own CoP to become visual to the right when he clicked on it in the workspace area. The tester found the tabs and clicked on the discuss tab in order to write an article. He wrote a new post and wondered how he could add references. He tried the link symbol, which closed down the new post. He wondered what the link symbol meant. He clicked around trying to understand how the functions new post, link and reference were connected. He found it very illogical. He used the trial and error method to click around to break the code of the connection. Then he tried to write an article again.

### **A1.5 Tester 5, Genealogist**

*Introduction – find your research area*

The tester opened the county facet, then the search AU-facet and looked for Sidensjö. He discovered that he got the whole parish. He examined the map while he tried to find more parishes and administrative units inside the municipality. He needed to set the timeline but could not find it. He felt he did not know what to look for. He clicked around in the AU info and AU History trying to get to the parishes within the municipality. He then looked at the archival resources and he chose a link and logged in to SVAR in order to view the pictures. He left QVIZ entirely and used the search functions in SVAR to receive the same search result that he received while using QVIZ. However he could not find the time span using SVAR.

When trying to make another search the tester got confused when so many windows had opened up and had problems finding the correct tab in the browser. He made a remark that his English was not very good. He minimized the browser windows and then returned to SVAR. He yet again got frustrated that he could not find the correct time span.

*Intervention. The observer intervened and reminded the tester to keep to the QVIZ system.*

The tester soon found the resources within the correct time span and said that it was important to get to know the local structure/GUI of a new system and that it might take a while. Also that when one looks for a specific event or fact it is often difficult to find.

*Find and save resources*

*Intervention. The tester is informed of the timeline and its functions.*

The testers returned to click around the AU information expecting to find the information linked. He did not use the timeline in order to filter, instead he clicked around the municipality on the map and manually counted the resources that could be found the year 1800.

*Intervention. The tester is informed of the Map Legend, which is much appreciated by the tester.*

The tester moved on to bookmarking. He cannot find the bookmarking despite many efforts.

*Intervention. The observer shows the bookmarking symbol.*

The tester wondered if it is a preferred function to go back and see information again. He filled in a name of the bookmark and then closed the window.

*Intervention, the observer pointed out that it was possible to add information regarding the bookmark and that the create button must be pressed in order for the bookmark to be created.*

The tester did the bookmarking over again using the observers' remarks, he pondered over the necessity of keywords. He did not comprehend what the bookmarking was used for. He successfully created the bookmark and logged out of the environment. He then created more bookmarks from the same book on other pages, and he wondered whether the bookmarking would lead to the page in question or only the first page of the document.

The tester wrote down some of the data received from the resources. He then returned to his search results in QVIZ and flipped through the pages in the result list and found the resource he looked for. He tried to find more information regarding the results he found earlier, but gave up and created a phony bookmark. He also gave up trying to find any more resources.

While trying to find more information regarding the administrative unit, the tester expected to find links to the administrative unit. Instead he tried to find more information in the SVAR portal and he made another bookmark. The tester is used to the SVAR portal and had tendencies to go back to that environment in order to find answers to the tasks.

## *A2. Observation notes for the Estonian testers*

### **A2.1 Tester 6, Student**

#### *Introduction – find your research area*

The tester switched language to Estonian. He used facets and chose state and got confused when he found two Estonian Republic, but chose the upper one. He then opened the facet “manor” and used arrows and clicked to the 26<sup>th</sup> page. The tester then got confused, because he did not understand whether there were administrative units, which had the same name. He found different levels for Alatskivi administrative units and did not understand that the names represented administrative units that had existed in different time periods.

#### *Find and save resources*

The tester was confused, looked at the map and clicked on Alatskivi, but nothing happened. He tried to figure out how it worked. Looked at the list of resources, then at the administrative unit history. Then he clicked at the Kodavere name in the AU History window, but nothing happened. He was a bit confused. Looked at the map again. Confusion – what does the map show? Went back to AU History. Decided that Kodavere was the smallest administrative unit today, because the AU History hierarchy led him to believe that.

He then turned to using AU history and found that in 1845 Alatskivi was a part of Kodavere parish.

The tester opened the timeline and understood that he could have used it earlier. He moved the time slider to 1850. Looked for Alatskivi in a faceted search, but did not find it. Found the zoom bar. The tester used the active facets and found Alatskivi again.

The tester admitted that he had no idea how to find the manor, which had the highest amount of archival resources. He zoomed the map to Alatskivi and tried to zoom in to the manor level. He remembered from the instruction movie that the color showed the number of resources, so he compared the colors to try to understand which units had more resources. For the exact answer he used the result list – the administrative unit which had more pages in the result list had more information. He did not figure out that the numbers behind the AU name in the active facets are the number of resources.

The tester commented that the map and the active facets should work better together. It is tedious to use the map first and then separately refresh the active facets.

The tester started looking around in the result list. Found a resource that matched the task and clicked on the link to DGS. In the DGS everything went smoothly. The user made a bookmark. He wanted to check the dates of the resource and went back to the time-spatial environment. The tester was pleased – it was comfortable to move between time-spatial environment and DGS. He then proceeded to find more resources and bookmarked these.

#### *Organize, compile and share your research*

The tester got confused again, as he could not find the bookmarks he had made. After looking around he found “my bookmarks” in the upper left menu. He admitted that he should have made different headings for the bookmarks in DGS.

The tester looked around in the CET – explored view, discuss, edit, relate content and changes as well as the QVIZ platform and community. He did not find any way to categorize his bookmarks. Then he found a possibility to make subfolders under my workplace. He named the subfolder Alatskivi 1, copied the bookmarks, which he had opened in the search field and pasted these in to “My workplace”.

At first the tester started to use the edit button. But then discovered “create” in the menu and after that created an article. He made a heading added content to the article, and then found himself in a predicament when it came to adding a bookmark. At first he looked at relate content and then add relation. But these did not seem to be the right places for the task. He started again by exploring my workplace, moved down and found a field named article under history and shortcuts. Went back to his text and found that it had disappeared.

Explored the content window and the folders and was certain that “relate content” was the most logical place to add bookmarks to his articles, but he did not understand how it worked.

*Intervention: The observer helped to add the first bookmark. Later on, the tester had no problem adding bookmarks to an article.*

The tester got tired and commented that the collaborative environment contained too many windows. But he quite quickly found the possibility to create a CoP under “My CoPs”. The tester did not understand the need to write down the membership conditions and tags.

He went to his user page and edited a short description about himself.

### *Collaborate*

The tester started to find other users through simple searches. Found out that he had made a mistake while naming a CoP, he wanted to correct it, but did not find a way to do it.

He then concentrated on finding other users – used search/filtering. Started with tags/keywords. The search seemed to be too difficult for him, too many possibilities. He used search/filtering and found a user, who had written about the same topic. He chose from the content window a discuss option and wrote a comment. The tester felt a bit unsure what the aim of this feature was and whether it was a place to comment other users articles or just to write to somebody else.

He then started with search/filtering and archival resource description, but was not satisfied with the result. He used search and archival social bookmark and then found what he was looking for. The tester copied the bookmark to his workspace, made subfolder and named it.

The tester got a bit confused again. Started with search/filtering and folder/community. But he did not succeed in finding other users with the same interest. Chose tag/keyword and then understood that he must be in the wrong place. Then he found the upper menu the Community folder, chose communities overview page and the list of CoPs opened up. The tester chose one, found a button called join, wrote the reason for joining. Everything seemed to work, but the discussion button did not activate. The tester thought that maybe there must be an admission from the CoP to become a member before one can discuss.

The tester later commented:

He did not like that the map and active facets did not work together. The refreshing of active facets was tedious. Otherwise he found the time-spatial

environment interesting and useful for his studies.

The collaborative environment was thought to be more complicated and the search fields were too difficult to comprehend, too many small windows and options. At home he would not have been so patient to learn the system. But he loved the idea and praised the point of usability.

## **A2.2 Tester 7, Genealogist.**

### *Introduction – find your research area*

Unfortunately this tester was the only one who did not have a user account created beforehand and unnecessary confusion arose, which made the tester a bit anxious at first.

The tester knew for sure, where Alatskivi was situated and moved on the map by clicking on the places. He did not use the zoom bar.

The tester assumed that the result list of resources would open automatically when he has clicked on an administrative unit on the map, however this was not the case.

The tester found the map functions, like moving the map, difficult to follow. He thought that deeper instructions were needed. He was afraid that to fulfill the assignment, he would have to read the whole user manual.

The tester wanted to quit. He was an active user of Saaga and he felt that the QVIZ environment was an obstacle to find what he is looking for.

After encouragement from the test team the tester continued. He looked around in the environment trying to find ways to use it. The observer encouraged him to try to use the facets. He made a hierarchy of facets and did not use search facet.

Tester was confused and in desperate need of some explanations of the features.

At first the tester did not find how to turn pages in the facets. He then accidentally found it, but commented that it was too difficult to find.

He had a lot of questions, while exploring the system – how does one make a difference between two administrative units in the hierarchy that have the same name. He did not want to make it active in order to learn more and therefore he did not find out the type and history of the administrative unit.

The AU history without the administrative unit types was difficult and pointless to the tester. He was certain that it was possible for him to understand the history only because of his prior knowledge. Without that – the history would have meant nothing to him.

### *Find and save resources*

From the result list of resources, the tester chose an interesting resource and moved to DGS. Logged in and because of the prior experience easily found a page to bookmark. From the instruction movie he remembered how to do it.

The observer noticed that the tester had opened the system in Internet explorer and the bookmarking window did not work. Together they opened the same thing in Mozilla Firefox.

The tester commented that in the bookmarking tool – the window was not movable and the image behind it was grey. It covered the digital image, which made it difficult for him to quote the text he found. The fields in the bookmarking

window were logical and easy. After saving a bookmark, the system advised him to log out. The tester did so.

The tester then went to the time-spatial environment and searched for more information regarding different administrative units. The question of what the numbers between the AUs stood for arose. The tester commented that the user manual should answer this.

#### *Organize, compile and share your research*

The tester did not feel comfortable in the CET without instructions.

The tester started with a “simple search”, but did not find his bookmarks.

*Intervention: Observer led the tester through the first moves – how to open my workspace, create new folders, find bookmarks using “search/filtering” and copy them to the folders.*

The tester did not find the description field he had written earlier while bookmarking in the DGS.

*Intervention: After some short instructions from the observer, the tester was able to do all the same things on his own. He concluded that instructions were necessary.*

*Intervention: The observer helped to create an article.*

The tester had no problems filling out the fields in order to create an article. He found them logical and he did not need any instructions.

*Intervention: The observer helped the tester to edit articles. Afterwards the tester was able to edit on his own.*

The system hung while editing articles, but after logging out and back in again everything worked properly.

To back track his steps, the tester used the back feature in the browser, but that meant that he ended up outside the QVIZ portal.

The tester remembered how to create a new CoP and found it easy to create. However the tester did not appreciate that before he was able to write something in the fields, the system gave him a comment “the value entered, is not valid”.

To find his own article was fairly difficult for the tester – at first he constantly used simple search, after a while he found the search/filtering function.

#### *Collaborate*

Time ran out. The tasks were not completed.

General comments from the tester were that as QVIZ is truly difficult, prior instructions or schooling is necessary. The user manual seemed to be a document from somebody who already knew the system made for people that were familiar with this kind of environment. It was not created for beginners. The tester thought that a lot of motivation was needed to read through the user manual.

Yet the tester was certain, that he would like to use QVIZ in the future.

### A2.3 Tester 8, Professional

#### *Introduction – find your research area*

She started by searching for Alatskivi on the map.

Chose the Estonian language for the system.

The tester wanted to zoom in, but did not notice the zoom bar. She tried to zoom in by clicking on the map.

She discovered that a double click on the map made it zoom in and she made a lot of double clicks in a short period of time, which meant that the map did not have time to react.

She changed strategy and tried to find Alatskivi using a faceted search. She opened area, county etc. She got a bit confused, clicked on the facet, on the map, again back to facets and discovered the Search facet, but as she had a lot of facets open already, the search facet opened was not visible to the user who thought that nothing opened.

She went back to the map, clicked on the map trying to make it even bigger.

*Intervention: The observer brought to the testers attention that there is a scrollbar for facets, which does not fit to the window.*

The tester looked for Alatskivi in the search AU facet, she chose Alatskivi, which had a number of resources. The tester explored AU History and tried to find a way to choose a specific time period. She did not notice the time bar under the map and tried to click on the AU History panel on Alatskivi, which had the dates asked for in the task. She became confused.

*Intervention: The observer made a hint towards the time bar. The tester commented that she did not understand that it was connected to the resources.*

#### *Find and save resources*

The tester used the time bar and found the necessary resources, logged into DGS and made bookmarks.

While making bookmarks the tester wanted to drag the window up a bit, because she could not see the lower side. But it was impossible to drag the window. In order to push the create button, one had to scroll down the whole page. After clicking on the create button, the note that the bookmarking process was successful could not be seen due to it being too high up, outside the window frame.

The tester made more bookmarks – used facets, zoom bar, time bar and dragged the mouse to move around in the map. She really learned the functionalities and managed well.

#### *Organize, compile and share your research*

The tester wonders where the bookmarks ended up. She searched for her bookmarks in the time-spatial environment, clicked there and got totally confused.

*Intervention: The observer shows the link to the next environment:*

<http://qviz.salzburgresearch.at/qviz>.

The tester logged in to the collaborative environment. She started to look for bookmarks. First of all she looked at My workspace. To her, that seemed to be the most logical place to look.

She could not find her bookmarks under My workspace and moved through the upper menu to Bookmarking and found My bookmarks there.

She wanted to categorize her bookmarks according to the themes, but did not understand how to do that. She chose to open a bookmark. She figured that there must be a box, link or button, to add a categorization or theme to a bookmark. Clicked through different places, but did not find anything that could help her. She tried to move the other way by starting off making themes or categorization. Opened create menu. But she doubted whether a tag was the same as a theme or a category.

She decided to go on to the next task and create an article.

She created an article using the upper menu. Opened edit and wrote a couple of sentences. She wanted to add a bookmark to her article, but faced problems. The tester did not understand how she could do it. She considered reading the user manual, but as it was really thick she did not read it.

*Intervention: The observer commented that the right mouse click provided different options. The tester commented that she would never have figured that out.*

She made a right mouse click on the bookmark and copied it, but then she got confused how to paste it. She tried to do it within the article in the edit view, but it did not work.

While trying to add a bookmark to an article, she accidentally opened one bookmark and could not find her article anymore. The tester commented, that it would be more logical if the article she made would appear in My bookmarks, but she did not see it there. The tester started to become frustrated.

She decided to drop the task and create a new CoP instead and she did so by using the create menu and it worked. She checked the left tree-menu (My workspace) that the new CoP in fact appeared.

She went back to trying to find her article. She found it using History. Once again she tried to add a bookmark to this article. Copied a bookmark, tried to paste it in to the metadata field in the dc:source line, but the browser hung and closed down during the action.

*The observer helped to re-open the browser and CET.*

The tester started to look for her article yet again. She went through the upper menus and then wanted to use simple search, but did not remember what the heading of her article was. She typed in Alatskivi, but the article did not appear.

She used the search/filtering form. Chose collaborative document – article and only my resources and succeeded in finding her article.

*Intervention: Observer showed the tester how to make subfolders under My workspace and how to copy and paste articles and bookmarks there.*

The tester admitted that she would not have figured that out by herself, since the right-mouse click menu is something new to her.

After copying the tester wanted to open the edit window, but it did not work. She got confused – she had made an article and saved it in her workspace, why could she not edit it?

#### *Collaborate*

She moved on to the next assignment. She opened her own user page to write an presentation of herself. But the same thing happened there, the user page could not open up in the edit view.

She decided to move on to the next task and try to find other users with similar interests. The tester opened the simple search and used the keyword Alatskivi, but did not find what she looked for.

Opened search/filtering, used userFolder/ and all users, but while looking at the result, she was not certain whether it was the right way to go.

Once more she opened simple search, keyword “rõuged” and found articles made by other users. She opened one article, chose the discuss feature then clicked on new post. In the opened window the tester tries to move the mouse to the subject line, but it did not work and she assumed that she should not write there and left it empty. She wrote the text in the lower box and saved it. Her post appeared with the comment but it lacked a subject. She was not sure whether her text was saved or not.

The tester concluded that the time-spatial interface was easier to work with. The collaborative environment was too difficult to grasp under such a short period of time.

### **A2.4 Tester 9, Genealogist**

#### *Introduction – find your research area*

Started the assignment (find Alatskivi) by dragging the map. Used the zoom bar and then again used the left mouse to drag the map to the right place. As he did not know exactly where the place was, he started to use the facets. At first the hierarchy was illogical to him, the choices of high-level and low-level districts, that does not exist in Estonia, confused him. He found the search facet and through that he found the place he was looking for.

The tester was confused to why there were so many versions of Alatskivi in the result from the search.

*Intervention: The observer hinted that one could look at AU History and AU info.*

The tester used AU info and through the map he found what he had been looking for. He did not use the timeline. He used the map and AU info to find which neighboring parish that had the most items.

The tester then started to use the timeline – chose 1845, but did not find anything. He then moved on to also use the show map legend. This confirmed his earlier decision, that Kokora had the most items.

#### *Find and save resources*

He used the search facet and looked at the result list, he found a resource he was interested in and went to DGS. He made three bookmarks by logging in, and filling out all the fields.

In the time-spatial environments resource list, the tester clicked on the name of the resource and waited for more information to open up, but nothing happened.

The tester used the faceted search hierarchy to find a place he was interested in. At last he found the possibility to switch to Estonian.

He chose different facets, but got confused when the map did not respond and there were no manors. It was difficult for him to follow the facets, which manors that were shown. It disturbed him that he had to activate the facets a couple of times.

He used the map to find the place of interest and went to DGS to make more bookmarks. He used the “what’s this” to understand how to separate tags.

The tester suggested that the result list should show at least the step higher in the hierarchy of the AU shown in the result list.

#### *Organize, compile and share your research*

He logged in to the collaborative environment and started to look for his bookmarks. First of all he looked in the workspace. Then moved on to look in My bookmarks under the menu.

*Intervention: Neither the tester nor the observer could find the testers bookmarks within the collaborative environment. This can be explained by the fact that there was no possibility to choose the default CoP in the description window.*

The tester made a couple of more bookmarks, and then the default CoP was an item that could be chosen and the bookmarks could be stored.

The tester found his bookmarks using search/filtering.

The tester created a new CoP using the workspace and right mouse click.

He tried to drag the bookmark to his CoP but did not succeed. He copied the bookmark, but did not find a place to paste it. The tester commented that it was too difficult.

He looked at the resource, but did not find out how to copy the bookmark to his CoP.

He used the manual to do this. Then copied, made a subfolder and pasted the bookmark there. He tried to edit the heading of the bookmark, saved it, but the heading did not change in the workspace. He tried to change it again, but did not succeed.

He started to create an article. From the upper menu he chose to create article, inserted the headline. Then he tried to edit it and started to add a wiki link using the icon. He was confused as to whether he must choose the link first and then insert it. The tester used the search wiki link from the open window and found links, chose one and inserted it. Everything worked fine. He saved the choice and was satisfied.

He tried to change the heading of the link and succeeded.

The tester commented that this was quite comfortable and if the environment could be a bit more logical, it would be a really good tool for genealogists. He would like to use more dragging in the system – to drag a link to an article, to drag a bookmark to a folder etc.

The tester was interested to know whether all users could see what he had created. In the menu he found; select as active CoP. He discovered what that was on his own.

The tester started to edit his user page. There was no problem to find and edit it. It worked very smoothly. He wrote in html code.

### *Collaborate*

For the next step – find a user. He searched from the upper menu. Finally discovered the search area below, but was not satisfied because he did not understand how he could find users with similar interests. He would be happy to have a possibility to search for users and then add some other filters for example tags or place of interest or something similar. The tester wondered how the simple search for users could help him in the future, if QVIZ has thousands of users.

The tester was not satisfied, but chose a user and used the discuss tab to send a comment.

The tester tried to find the comments sent to him. A tester from the same room had sent a message to him that he knew of. He was not pleased that the system did not display the new comments, discussions made to his bookmarks, articles etc.

The tester wanted to send a comment back to the user who commented on his page but in the discussion folder in his user page, the user was not active and he had to find him and to then send a message. The tester would have liked the name of the user posting the comment to be an active link.

The tester tried to find the bookmarks from the user he was interested in. He found that it was not possible to filter out bookmarks that were made about only Estonian resources.

He searched for CoPs using the CoP navigator, but did not find what he was interested in. Again he commented that he would like to filter the search to only Estonian resources.

From the upper menu he chose all communities, but it did not work. The system hung.

Finally he found a CoP he was interested in and joined it. He tried to create an article connected to the CoP he had joined and succeeded. He created a subfolder and then tried to discuss an article, but it did not work. He refreshed the system and then it worked.

He tried to relate content and clicked on add relation. The tester got confused, because it was difficult to understand how it worked. What was related - and how was that shown?

He found out that it was only possible to relate a tag, but he would have liked to relate an article or a bookmark.

He changed the rights of his CoP, but still it was only possible to relate tags. He suggested that the system could allow users to relate tags in the metadata window – it would be the easiest way to do it. Right now it seems too difficult for the tester.

He made a suggestion that within the workspace area, the bookmark could open up when a user clicked on it. Right now a user had to do one (or even two – right mouse click to open the menu and then to choose view) additional click to see the data about a bookmark.

## A2.5 Tester 10, Educator

### *Introduction – find your research area*

At first the tester did not know how to begin, but started by zooming on the map with the mouse.

The tester then went on to using active facets, but got confused, because she could not figure out how to move to the next window.

*Intervention: The observer helps her to notice the arrows.*

The tester used the active facets to find places with the same name and again got confused, because she did not understand what kind of administrative places that were behind the names. She also used the search facet

Tester easily found the time bar and started to use it. She chose the facets state-county-manor and discovered the list of archival resources. In this way she found the answer to the question, what the smallest unit was.

### *Find and save resources*

The tester did not understand where to find out which unit that had the most resources. She clicked on different places, but could still not find it. The tester yet again got a bit confused.

*Intervention: Observer shows where to find the history of point.*

She went to DGS and easily made a couple of bookmarks. The tester commented that the content of QVIZ and the idea was very good, but that the technical approach seemed difficult at first.

### *Organize, compile and share your research*

The tester logged in to the CET, but did not find her bookmarks. The tester clicked around in the CET trying to understand the functionalities. She started with search bookmarks and filtering, but did not understand how to categorize bookmarks.

*Intervention: The observer show how to use my workspace and that one can right mouse click.*

The tester managed to edit an article and create a CoP and started to enjoy working with the collaborative environment.

She found a user and chose discuss and sent a new post. The tester got a bit confused, because she wanted to write to a user, but the system gave her a feeling that she was writing to herself when in fact she had posted a comment to another user.

The tester was fascinated that there was a lot of useful information about other users. She moved on to Relations overview and commented that the area was necessary and had a lot of useful information. The tester then tried for a long time to find CoPs.

*Intervention: The observer points out All communities.*

### *Collaborate*

A technical error appeared which made it impossible to activate the discussion function. After closing down other windows it worked.

She chose a CoP and then sent a new post under it in the discussion window.

The tester had a lot of questions - How to find documents made by other users?  
How could a user add his/her document to other users documents?

The tester did not finish the entire test case. She was certain that for her, finding archival resources would be much easier in another kind of database. She very much enjoyed the possibility to communicate with other users and exchange articles and add information to articles. She liked the collaborative environment, but commented that one needed to get used to it first. The tester was positive that QVIZ would be really good for genealogists and local historians.

### A3. Microsoft Power Point presentation for testers.



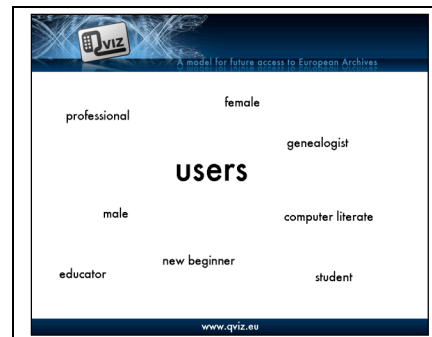
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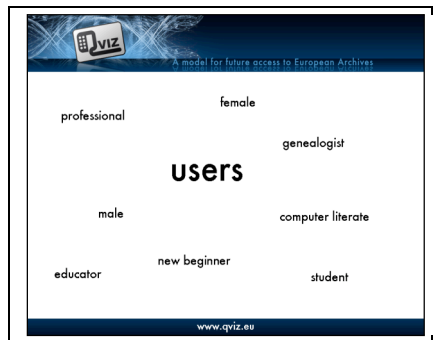
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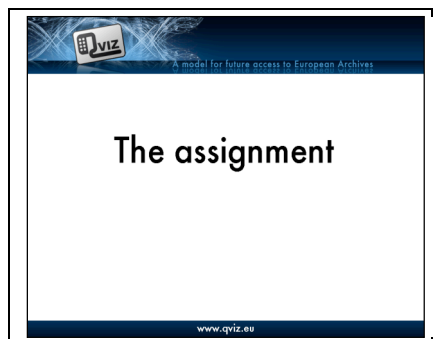
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## *A4. Case study scenarios*

### **A4.1 Swedish usability scenario – QVIZ**

First there will be some short introductory tasks to do – the introduction. Thereafter you will do a minor research task and use the collaborative environment in which you will be able to communicate with other QVIZ-users. We want you to find the relevant archival sources, or at least be close to the sources, rather than to find the correct answer to the question. Since this is a test of the platform, not of your skills, it's not important to find the exact answer.

The research case will be to investigate the spread and consequences of Baptism in Sweden.

Sweden has a long tradition of a strong State Church, and until 1858 the Conventicle Act prohibited people to gather of religious reasons without a clergyman. It was also compulsory for Swedish citizens to baptize their children soon after birth. But during the 1840s Free Church ideas were spread and the first Baptist baptism (for adults) were performed in the parish of Sidensjö, (outside Örnsköldsvik, Västernorrland), in 1847, which means that 1) there must have been Baptists in the parish and 2) they probably didn't baptize their children (which was against the law) and 3) some children must have been baptized with "help" from the authorities, i.e. the Church and the police.

#### *Introduction – find your research area*

- Find Sweden and try to locate Sidensjö. Zoom in on it.
- Are there more administrative units with the same name in Sweden?
- Find the lowest administrative unit Sidensjö is part of today.
- What were the names of the municipality and the parish Sidensjö was part of in year 1900 – and for how long was it like so?
- Find a parish, as close as possible to the parish of Sidensjö, which has more than 6 archival resources in 1800.

#### *Find and save sources*

- Find documents, in "Födelse- och dopböcker", where you could trace how many children that were forced to be baptized in Sidensjö between 1845 and 1860 – bookmark three of them for later use.
- Choose one parent of one child and find some documents where it's mentioned that he/she was married and/or convicted for crime. Bookmark two different sources.
- What else can be said about mid 19<sup>th</sup> century Sidensjö? Demographical structure, adjacent parishes? Bookmark two different sources.
- Compare, (through finding some documents to back up your argument) the rate of law enforced baptismal in Sidensjö with the rate in the parish of Umeå lands, at that time known for its Church faithfulness. Bookmark three sources from "Husförhörlängder".

*Organize, compile and share your research*

- Organize your bookmarks in categories.
- Write a (mock) article with references to some of your bookmarks.
- Make your own group (so called CoP – community of practice) that would handle your own personal area of interest.

*Collaborate*

- Write a short presentation of yourself in your personal page.
- Find someone that might be interested in your group and communicate this to that person.
- Find one interesting source, which has been bookmarked by someone else and copy the bookmark to your account.
- Try to find a group with similar interest as you.
  - Make an attempt to join it.
  - Discuss a related topic.
- Connect some of your newly created item with someone else's work.

#### **A4.2 Estonian usability scenario – QVIZ**

First there will be some short introductory tasks to do – the introduction. Thereafter you will do a minor research task and use the collaborative environment in which you will be able to communicate with other QVIZ-users. We want you to find the relevant archival sources, or at least be close to the sources, rather than to find the correct answer to the question. Since this is a test of the platform, not of your skills, it's not important to find the exact answer.

The research case will be to investigate the spread and consequences of smallpox in Estonia during early 19<sup>th</sup> century.

A vaccine against smallpox was developed in late 18<sup>th</sup> century in England and during the decades thereafter it was spread and used all over Europe, first in cities and then in the countryside. The first known vaccination on Estonian ground took place in 1825 in Tallinn. In this research task you will compare the death rate among children, due to smallpox, between 1835 and 1840, in Alatskivi. And compare that to the death rate, due to smallpox, in Rakvere during the same time period.

##### *Introduction – find your research area*

- Create a user account
- Find Estonia and try to locate Alatskivi. Zoom in on it.
- Are there more administrative units with the same name in Estonia?
- Find the lowest administrative unit Alatskivi is part of today.
- What were the names of the county, parish and manor Alatskivi was part of in year 1845 – and for how long was it like so?
- In order to be able to compare the death rate among the children of neighboring areas, find the manor which has the highest number of archival resources.

##### *Find and save sources*

- Find documents where you could trace how many children that died from smallpox in Alatskivi between 1835 and 1840 – bookmark three them for later use.
- Choose one child who died of smallpox and find some documents with information about his/her family. Bookmark two documents.
- What else can be said about the manor of Alatskivi in 1840? Demographical structure, adjacent manors? Bookmark two different sources.
- Compare, (through finding some documents to back up your argument) the death rate in Alatskivi with the rate in the Rakvere, a city where the spread of vaccine started earlier. Find resources containing information about citizens of Rakvere. Analyze the age structure in 1834. Bookmark three resources.

*Organize, compile and share your research*

- Organize your bookmarks in categories.
- Write a (mock) article with references to some of your bookmarks.
- Make your own group (so called CoP – community of practice) that would handle your own personal area of interest.

*Collaborate*

- Write a short presentation of yourself in your personal page.
- Find someone that might be interested in your group and communicate this to that person.
- Find one interesting source, which has been bookmarked by someone else and copy the bookmark to your account.
- Try to find a group with similar interest as you.
  - Make an attempt to join it.
  - Discuss a related topic.
- Connect some of your newly created item with someone else's work.

#### *A5. Checklist for the usability test leader*

- Book the test subjects and the observers, (approximately three weeks in advance)
- Make sure you know what needs to be tested and have these criteria in your possession at least three weeks ahead of the trial.
- Determine the risks and contingencies and try to avoid them
- Make sure that the developers document what features that are to be tested and why. Do the same with the features, which are not going to be tested.
- With the assistance from the developers decide the criteria for the system to pass or fail the trial as well as entry and exit criteria.
- Find and book a suitable room for the trial (approximately two weeks in advance)
- Have the test printed and ready (approximately a week in advance)
- Have discussion questions ready (approximately a week in advance)
- Have explanatory session manuscript ready (approximately a week in advance)
- Make sure that the prototype and the computer functions properly by making a small test yourself (approximately a week in advance)
- Extract all unnecessary stimuli from the test environment (approximately the same day or same week)
- Have an explanatory session with the test observers (approximately the same day or same week)
- Have an explanatory session with the test subjects (on the same day as the test)
- Introduce the test subject to the room (on the same day as the test)
- Make sure that the test subject is comfortable (on the same day as the test)
- Document everything said aloud and keep reminding the subject to think aloud (on the same day as the test)
- Gather all test subjects for a small discussion (on the same day as the test)
- Compile everything said during the trial (on the day after the trial)
- Assemble all information gathered during the trial in a test report (the week after) (Things said aloud, evaluation/questionnaire and discussion notes)

*A6. List of additional or altered preparations before testing:*

- The observers must pretest the computers, which are going to be used during the testing day, to be sure that there are all necessary plug-ins.
- Use the short explanation film in English
- Remember to have one person (test leader) that can walk around, make decisions and solve problems that might arise, that is not attached to any other person.
- Have log-ins to the CET prepared for all the testers
- If possible, log in to Saaga beforehand
- If a tester gets stuck and the observer makes the assumption that they will never move on beyond this problem, they are allowed to intervene, as long as they make careful notations of this and provides the reason for intervention.
- Make sure that the room you use for this test is comfortable, all cell-phones turned off, and that no one is running back and forth.